



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

TRANSACTIONS
OF THE
AMERICAN PHILOSOPHICAL SOCIETY,
HELD AT PHILADELPHIA,
FOR PROMOTING USEFUL KNOWLEDGE.

VOL. VII.—NEW SERIES.

PUBLISHED BY THE SOCIETY.

Philadelphia:
PRINTED BY WILLIAM S. YOUNG, PRINTER TO THE SOCIETY,
No. 88, NORTH SIXTH STREET.

1841.

CONTENTS.

Laws of the Society relating to the Transactions.	iii
Officers of the Society for the Year 1841.	v
List of the Members of the Society elected since the Publication of the Sixth Volume.	vi
Obituary Notice.	viii

ARTICLE I.

Observations to determine the Magnetic Dip at various places in Ohio and Michigan. By Elias Loomis, Professor of Mathematics and Natural Philosophy in Western Reserve College. In a letter to Sears C. Walker, Esq., M. A. P. S.	1
---	---

ARTICLE II.

1. Letter from the Rev. Charles Gutzlaff to John Vaughan, Esq., on the Chinese System of Writing. 2. Letter from Mr. Duponceau to the same, ordered by the Society to be published with the preceding one, to which it is an answer.	7
--	---

ARTICLE III.

On the Extrication of the Alkalifiable Metals, Barium, Strontium, and Calcium. By Robert Hare, M. D., Professor of Chemistry in the University of Pennsylvania.	31
---	----

ARTICLE IV.

Astronomical Observations made at Hudson Observatory, Latitude 41° 14' 37" North, and Longitude 5h. 25m. 42s. West; with some Account of the Building and Instruments. By Elias Loomis, Professor of Mathematics and Natural Philosophy in Western Reserve College, Hudson, Ohio.	43
---	----

ARTICLE V.

- Description of an Apparatus for Deflagrating Carburets, Phosphurets, or Cyanides, in Vacuo or in an Atmosphere of Hydrogen, with an account of some Results obtained by these and by other means; especially the Isolation of Calcium. By Robert Hare, M. D. - 53

ARTICLE VI.

- Upon a new Compound of the Deuto-Chloride of Platinum, Nitric Oxide, and Chlorohydric Acid. By Henry D. Rogers, Professor of Geology in the University of Pennsylvania, and Martin H. Boyè, Graduate of the University of Copenhagen. - 59

ARTICLE VII.

- On the Longitude of Several Places in the United States, as deduced from the Observations of the Solar Eclipse of September 18th, 1838. By E. Otis Kendall, Professor of Mathematics in the Central High School of Philadelphia. - 67

ARTICLE VIII.

- On the Patella Amæna of Say. By Isaac Lea. - 73

ARTICLE IX.

- Observations of the Magnetic Intensity at twenty-one Stations in Europe. By A. D. Bache, LL. D., President of the Girard College for Orphans, one of the Secretaries of the American Philosophical Society, &c., &c. - 75

ARTICLE X.

- Additional Observations of the Magnetic Dip in the United States. By Elias Loomis, Professor of Mathematics and Natural Philosophy in Western Reserve College. - 101

ARTICLE XI.

- On a new Principle in regard to the Power of Fluids in Motion to produce Rupture of the Vessels which contain them; and on the Distinction between accumulative and instantane-

CONTENTS.

xi

neous Pressure. By Charles Bonnycastle, Professor of Mathematics in the University of Virginia. - - - - -	113
---	-----

ARTICLE XII.

On the Storm which was experienced throughout the United States about the 20th of December, 1836. By Elias Loomis, Professor of Mathematics and Natural Philosophy in Western Reserve College. - - - - -	125
--	-----

ARTICLE XIII.

Observations on Nebulæ with a Fourteen Feet Reflector, made by H. L. Smith and E. P. Mason, during the year 1839. By E. P. Mason. - - - - -	165
---	-----

ARTICLE XIV.

Engraving and Description of an Apparatus, and Process, for the rapid Congelation of Water, by the explosive Evolution of Ethereal Vapour, consequent to the combined influence of Rarefaction and the absorbing Power of Sulphuric Acid. By Robert Hare, M. D. -	215
---	-----

ARTICLE XV.

On the Insufficiency of Taylor's Theorem as commonly investigated; with Objections to the Demonstrations of Poisson and Cauchy, and the assumed Generalization of Mr. Peacock; to which are added a new Investigation and Remarks on the Development and Continuity of Functions. By Charles Bonnycastle, Professor of Mathematics in the University of Virginia. - - - - -	217
---	-----

ARTICLE XVI.

Notice of the Oolitic Formation in America, with Descriptions of some of its Organic Remains. By Isaac Lea. - - - - -	251
---	-----

ARTICLE XVII.

Observations to determine the horizontal Magnetic Intensity and Dip at Louisville, Kentucky, and at Cincinnati, Ohio. By John Locke, M. D., Professor of Chemistry in the Medical College of Ohio. - - - - -	261
--	-----

ARTICLE XVIII.

- Observations upon the Meteors of August. By C. G. Forshey, City Engineer of Natchez,
and late Professor of Mathematics and Civil Engineering, Jefferson College, Mississippi. 265

ARTICLE XIX.

- On the Change effected in the Nitrates of Potash and Soda by the limited Application of
Heat, with the View of obtaining pure Oxygen, by which they are only partially con-
vertible into Hypo-nitrites; also on a Liquid and a gaseous ethereal Compound, resulting
from the reaction of nascent hypo-nitrous Acid with the Elements of Alcohol. By Ro-
bert Hare, M. D., Professor of Chemistry in the University of Pennsylvania. - - 277

ARTICLE XX.

- Descriptions of new Species and Genera of Plants in the natural Order of the COMPOSITÆ,
collected in a Tour across the Continent to the Pacific, a Residence in Oregon, and a
Visit to the Sandwich Islands and Upper California, during the years 1834 and 1835.
By Thomas Nuttall. - - - - - 283

ARTICLE XXI.

- Description of Nineteen new Species of Colimacea. By Isaac Lea. - - - 455
- Donations to the Library and Cabinet. - - - - - 467